



Dart Hawkesbury  
1270 Aberdeen St Hawkesbury, ON K6A 1K7 Canada  
Tel (613) 632-5200

## Purchasing Receipts

PO No	Supplier	Line Item No	Ref No	Terms	Purchased Item	Description	For Part No	Project	Equipment ID	Order Qty	Due Date	Received Quantity	Accounting Job No	Container No	Status	Receive Date	Price/Unit	Aging Days	Past Due	T
PO039505	ACI001-VC	1	1	Net 30	MT-4140QT-R4.000	AISI 4140 Quenched & Tempered Steel Round Bar 4.000" Dia. : AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT				2	4/11/2018	2	S058924	Stock	4/6/2018	\$ 86.95 / ft	0	\$		
					MT-4140-R2.000	AISI 4140 Round Bar : MAT'L: AISI 4140 ROUND BAR MINIMUM ROCKWELL C = 20 Rc MAXIMUM ROCKWELL C = 38 Rc SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529						2	S058925	Stock	4/6/2018	\$ 19.16 / ft	0			
Total:										4		4								\$1

Plex 4/6/2018 1:26 PM Dart.Dubois.Pascal



Dart Aerospace Ltd.  
1270 Aberdeen St  
Hawkesbury, ON  
K6A 1K7  
Canada

Tel (613) 632-5200

# PURCHASE ORDER PO039505

**Supplier:** ACI001-VC  
Acier Ouellette Inc.  
935 Boul. Du Havre  
Valleyfield  
QC  
J6S 5L1 Canada  
Phone: 800 667 4248  
Fax: 450 377 5696

**PO No:** PO039505  
**PO Date:** 4/4/18  
**Due Date:** 4/11/18  
**Purchase Order Revision:**  
**Revision Date:**  
**Ship-To Contact:** Lavoie, Chantal Phone: clavoie@dartaero.com

**Ship To:** 1270 Aberdeen Street  
Hawkesbury  
ON  
K6A 1K7 Canada  
Phone: 613-632-5200

**Via:** Ground  
**Pymt Terms:** Net 30  
**Freight Terms:**  
**Special Comments:** QUOTE NO SOU0093341

Line Item	Part	Supplier Part No	Description	Items						
				Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	MT-4140QT-R4.000		AISI 4140 Quenched & Tempered Steel Round Bar 4.000" Dia. : AISI 4140 Q&T Round Bar : MAT'L: AISI 4130 QUENCHED & TEMPERED ROUND BAR AS PER ASTM 4140 QT OR ASTM 4142 QT	Firmed	4/11/18	2 ft	0 ft	2 ft	\$86.95/ft	\$173.90
2	MT-4140-R2.000		AISI 4140 Round Bar : MAT'L, AISI 4140 ROUND BAR MINIMUM ROCKWELL C = 20 Rc MAXIMUM ROCKWELL C = 38 Rc SPECIFICATION: ASTM A29, AMS 6349, AMS 6382, AMS 6529	Firmed	4/11/18	2 ft	0 ft	2 ft	\$19.1555/ft	\$38.31
3	M6061T6S2.750X4.000		6061-T6 SHEET 2.75 Thick x 4.000 Wide : PURCHASE MATERIAL: 6061-T6/T62/T651 ALUMINUM SHEET OR PLATE SPECIFICATION: QQ-A-250/11 OR AMS-QQ-A-250/11 OR AMS 4025 OR 4027 OR ASTM B209 receive ft	Firmed	4/11/18	6 ft	0 ft	6 ft	\$64.16666/ft	\$385.00

Grand Total: \$597.21

**Order Notes**

- Procurement Quality Clauses
- A005 right of entry
- A012 chemical and physical test report
- A016 personnel qualification
- A017 raw material identification (as applicable)
- A026 certification of material conformance
- A041 quality management system
- A042 part notification by supplier
- A043 retention of quality documents
  
- A048 counterfeit parts avoidance, detection, mitigation and disposition program
- A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit [www.dartaerospace.com](http://www.dartaerospace.com) for further explanation.



Plex 4/6/18 12:49 PM dart.dubois.pascal

# DELIVERY - CLIENT

Copy CO00082164



## ACIER OUELLETTE INC.

935, Boul. du Hâvre  
Salaberry de Valleyfield (Québec) J6S 5L1  
Tél.: 450-377-4248 Mtl: 514-336-4248 Ext.: 800-667-4248  
Fax: 450-377-5596 Mtl: 514-336-4246 Ext.: 866-456-4242

### Billed to

DART AEROSPACE LTD

1270, ABERDEEN ST.  
HAWKESBURY, Ontario, K6A 1K7

### Shipped to

, Ontario,

Att : CHANTAL LAVOIE Tél.: 613-632-5200

Delivery Route 5

Page

1

### Instruction F-M

Product Description	Weight	Qty	U/M	PCS NB			Internal Use Only				
				CMD	EXP	B/O	IN	I	S	C	OUT
1 ROUND 4140 HEAT TREAT 4 (R) R4140-4H <i>1 X 24" LINE 1 HEAT: 12080470</i>	88.14	2.00	PI_\$CLB	<i>1 X 24"</i>	<i>2</i>		<i>APR 06 2018</i>	<i>DAS 11 9-89</i>			
COUPE A LA SCIE SCIE <i>1</i>		1.00	UN								
2 ROUND 4140 ANNEALED 2 (R) R4140-2A <i>1 X 24" LINE 2 HEAT: 144805</i>	21.36	2.00	PI_\$CLB	<i>1 X 24"</i>	<i>2</i>		<i>APR 06 2018</i>	<i>DAS 11 9-89</i>			
COUPE A LA SCIE SCIE <i>1</i>		1.00	UN								

NIR : R-109516-6



# Eaton Steel Bar Company Inspection Certificate 1701209

EN 10204:2004-3.1

Customer

BOL Ship Date Customer PO Item Customer Item

Item Description

225539 19-Feb-2018 B40059 8556 rev 008 013733

4 HR RD4140TKR 21/24ft SBO QTSTF VD C9-AI-FG MST

All bundles listed below were produced using steel from Heat 12060470 issued by GERALDO-BRAZIL and were completed from Eaton Steel Job 823764.

Chemistry	Description	Value	Units	Jointry	Description	Value	Units
C	Carbon	0.41000	PWGT	J30	30/16 inch From Quenched End	4.2	HRC
Mn	Manganese	0.94000	PWGT	J32	32/16 inch From Quenched End	42	HRC
P	Phosphorus	0.01400	PWGT				Units
S	Sulfur	0.01400	PWGT	Mechanical	Description	Value	Units
Si	Silicon	0.29000	PWGT	TENSILE PSI	Tensile Strength in PSI Units	153100	PSI
Ni	Nickel	0.09000	PWGT	YIELD PSI	Yield Strength in PSI Units	134400	PSI
Cr	Chromium	1.04000	PWGT	ELONGATION	Percent Elongation	19.00	PCT
Mo	Molybdenum	0.24000	PWGT	REDUCTION	Percent Reduction in Area	55.0	PCT
Al	Aluminum	0.01700	PWGT	BRINELL SURF	Brinell Surface	313.0	BHN
Cu	Copper	0.18000	PWGT	HEAT TREATING	Description	Value	Units
V	Vanadium	0.00400	PWGT	TIME AT TEMP	Temper Temp in Fahrenheit	500 - 2500	DEGF
Cb	Columbium	0.00400	PWGT	TEMPER TEMP F	Temper Temp in Fahrenheit	1600 - 1700	DEGF
N	Nitrogen	0.00570	PWGT	AUSTENITE TEMP F	Austenite Temp in Fahrenheit	500 - 2500	DEGF
DI	Ideal Diameter	6.62910	IN	SR TEMP F	Stress Relief Temp in Fahrenheit	0 - 20	GN
Cleanliness	Description	Value	Units	MAGNETISM-HT	Magnetism in Gauss	-	-
SAE J422 OX	SAE J422 Oxide Rating	0.0 - 5.0	NDM	TIME AT TEMP	Time at Temperature	Report	-
SAE J422 SI	SAE J422 Silicate Rating	0.0 - 5.0	NDM	QUENCH MEDIA	Quench Media Requirements	P&W/O	-
MACRO ETCH	Report macro etch results.	Value	Units	STRESS FREE	Cert stress free	CERTIFIED	-
Geometry	Description	Value	Units	HT4140-4QQT	Quench & Temper	CONFORMS	-
DIA/BETTER	Diameter	4.0000 - 4.0625	IN	MILL PROCESSING	Description	Value	Units
Jointry	Description	Value	Units	MELT COUNTRY	Melted in Country	BRA	-
J1	1/16 inch from Quenched End	59	HRC	ROLLED COUNTRY	Rolled in Country	BRA	-
J2	2/16 inch from Quenched End	59	HRC	RED RATIO	Reduction Ratio	7.10	RED
J3	3/16 inch from Quenched End	58	HRC	ASTM Standard	Description	Value	Units
J4	4/16 inch from Quenched End	58	HRC	A193/193M-01	Grade B7	CONFORMS	-
J5	5/16 inch from Quenched End	58	HRC	A434-90a-BC	ASTM A BC Tensile and Yield properties	CONFORMS	-
J6	6/16 inch from Quenched End	57	HRC	STRUCTURE	Description	Value	Units
J7	7/16 inch from Quenched End	57	HRC	PBRCT TM	Percent Tempered Martensite	80 - 100	PCT
J8	8/16 inch from Quenched End	57	HRC	MICROSTRUCTURE	Reported Microstructure	TM	-
J9	9/16 inch from Quenched End	56	HRC	Tag Number	Oty	Length	
J10	10/16 inch from Quenched End	56	HRC	022-2203726	8858 LBS	22ft10in/21ft10in	
J11	11/16 inch from Quenched End	55	HRC				
J12	12/16 inch from Quenched End	54	HRC				
J14	14/16 inch from Quenched End	52	HRC				
J16	16/16 inch from Quenched End	51	HRC				
J18	18/16 inch from Quenched End	49	HRC				
J20	20/16 inch from Quenched End	46	HRC				
J22	22/16 inch from Quenched End	43	HRC				
J24	24/16 inch from Quenched End	43	HRC				
J26	26/16 inch from Quenched End	42	HRC				
J28	28/16 inch from Quenched End	42	HRC				

Bundles tags with Eaton Steel identifiers reference the steel grade, heat, purchase order number where applicable, part number, product description and quantity. Material produced in accordance with Eaton Steel's Quality Manual QM-00002 Rev 0 dated 11/2/2013.

We hereby certify the above to be in conformance, and a true copy of data represented in company records. This steel was not subject to weld repair or exposed to mercury while in the possession of Eaton Steel.

Created on 19-Feb-2018  
Marc Benjamin, Corporate Metallurgist

This document is for informational purposes only, means of electronic  
data processing and is valid without signature.

10221 Capital Avenue, Oak Park, MI 48237 USA  
<http://www.eatonsteel.com>

Tel: 248-398-3434  
Fax: 248-398-1434

PART NUMBER	PESO/WEIGHT (KG)	
8168	40.553,000	

CLIENTE/CLIENT	MATERIAL/MATERIAL
EATON STEEL BAR COMPANY	705013345

NORMA/SPECIFICATION	QUALIDADE/GRADE
SPEC FOR ITEM 8168 006 23.01.2014	4140TKR

Nota Fiscal/Invoice	Pedido/Cust. Order	Ord-Formec/Ord-Supply	Lote/Batch	Peso/Weight (Kg)
0000017226	162566	5336580 - 8108997269	1208047006	22.523,000
0000017311	162566	5336580 - 8108972888	1208047006	13.530,000

ANÁLISE QUÍMICA/ CHEMICAL COMPOSITION	C	Mn	Si	P	S	Cr	Ni	Mo	V	Cu	Sn	Al	Ti	Nb	N	B	Pb
	0,410	0,94	0,29	0,014	0,014	1,04	0,09	0,24	0,0040	0,180	0,0120	0,0170	0,0010	0,0040	0,0057	0,0002	0,0010
	H	Ca	As	Sb	DY												
	Ppm	%	%	%	%												
	1.00	0,0008	0,0030	0,0020	6,6291												

ENSAYOS MECÁNICOS/MECHANICAL PROP	Hardness	Peso/Weight (Kg)
	HB	305,00

ENSAYOS METALÓGRAFICOS/ METALLOGRAPHIC TESTS	Austenitic	
	Grain Size	

MICROINCLUSÕES/ INCLUSION RATING NUMBER	7	
---	---	--

ASTM/SAE	A - TS	A - HS	B - TS	B - HS	C - TS	C - HS	D - TS	D - HS
REGULAR	1,5	1,0	0,0	1,5	0,0	0,0	1,0	0,0
SAE	Oxide	Silicatos						
REGULAR	0,0	0,0						

MACROGRAFIA/MACROGRAPHY	Blue Fracture	
	(H)	



CERTIFICADO DE QUALIDADE  
QUALITY CERTIFICATE  
CERTIFICADO DE CALIDAD

Page 2/2

ISO 9001:2008  
Quality Management System

ISO TS 16949  
Quality Management System

ISO 14001  
Environmental Management System

OUR MANAGEMENT SYSTEM IS CERTIFIED TO ISO9001 / TS16949 / ISO14001

PRODUTO/PRODUCT	Cert. Nº
HOT ROLLED ROUND BAR	0000022442
NO HEAT TREATMENT	CORRIDA/HEAT
AS ROLLED	12080470

PART NUMBER	PESO/WEIGHT(KG)	MATERIAL/MATERIAL	QUALIDADE/GRADE	BITOLA/SIZE
8168	40.553,000	705013345	4140TR	101,60 mm

TEMPERABILIDADE/HARDENABILITY	1/16"	2/16"	3/16"	4/16"	5/16"	6/16"	7/16"	8/16"	9/16"	10/16"	11/16"	12/16"	14/16"	16/16"	18/16"	20/16"	22/16"
HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC	HRC
59,5	59,1	58,8	58,2	58,0	57,8	57,5	57,0	56,5	56,0	55,6	55,0	52,5	51,3	49,8	46,5	43,5	
24/16"	26/16"	28/16"	30/16"	32/16"													
HRC	HRC	HRC	HRC	HRC													
43,3	42,8	42,7	42,5	42,0													

#### GRAU DE REDUÇÃO/REDUCTION RATE

6,9941 : 1

#### OBSERVAÇÕES/OBSERVATIONS

MeltsShop route: EAF, LF, VD, CC.

Made in Brazil at Gerdau Charqueadas.

Produced according to ASTM A304 and ASTM A322

Reduction Ratio: 7,1:1

Melted in Brazil

Rolled in Brazil

ANDRÉ L. SILVA FAGUNDES CREA 0682601000



DEPARTAMENTO DA QUALIDADE / QUALITY DEPARTMENT

BR-ML-CHARQUEADAS-AFP. 20.09.2017

**ENVIRONMENTAL RECOMMENDATIONS RELATED TO PRODUCTS:**  
 In order to contribute with the environment and sustainable development of our productive chain, we recommend to our clients to dispose accordingly the waste related to our products, according to the environmental legislation of your region, state or country.

# Lab Services Report



10221 Capital Avenue  
Oak Park MI 48237  
(248)543-3578 telephone  
(248)398-1434 facsimile

**Bill To:** Apollo Heat Treating and Processing Company, L.L.C.  
10400 Capital Avenue  
Oak Park, MI  
**Attn:** Randy Call  
rcall@apollohtp.com

**Ship To:** Apollo Heat Treating and Processing Company, L.L.C.  
10400 Capital Avenue  
Oak Park, MI  
**Report Date:** 12/20/2017  
**Report ID:** 17-4982  
**Request ID:**

This report contains results for the indicated services performed on the following sample(s):

Part No	8556	Finish	HR	Shape	Round	PO #:	823764
Size	4.000	Grade	4142	Work Order	823764		

Titan Sample ID	Heat	Customer Sample ID
17-4982-1	12080470	823764 JOB 3173

*Steve Avery*

Report Approved By: Steve Avery

## Mechanical Testing

ASTM E8M-16a

ASTM E10-17

Sample ID	Ultimate Tensile, psi	0.2% Offset Yield, psi	Elongation - Manual, %	Reduction of Area, %	HBW Surface
17-4982-1	153,100	134,400	19	55	313

## Test Comments

Mechanicals tested at Midradius



Certificate Number: 207.01 Any services within a section marked with \* are not part of Titan Metallurgy's current A2LA accreditation.  
Testing Laboratory

Report ID: 17-4982

All testing performed by Titan Metallurgy was done at ambient (room) temperature.

Page 1 of 1



Heat Treating & Processing Company, L.L.C.

10400 Capital Avenue • Oak Park, Michigan 48237 • (248) 398-3434

### CERTIFICATION OF HEAT TREATMENT

Date: 12 / 29 / 2017

Certification Number: 17 - 0888

Customer's Order Number: 823764

Part Number: 8168 - 8556

Heat Number: 12080470

Heat Treat Job Number: 3173

Material: 4140

Quantity: 84 Pcs.

Weight: 83,449 Lbs.

Description: 4.0000" Diameter x 23' 4" Length

Per Specification: ESHT HT4140 - 42QT

	Temperature	Time at Heat	Coolant
Normalized	N/A		
Preheat	N/A		
Austenitized/Hardened	1575 °F	1 Hour 30 Minutes	
Spray Quenched	98.1 °F – 104.9 °F	N/A	Water
Temper	1150 °F	2 Hours 35 Minutes	Air Cooled to Ambient
Temper	N/A		

Method of heat treat monitor, set point thermocouple (Type K). Equipment calibrated per AMS2750E. We hereby certify the above material has been treated in the manner described are correct as contained in the records of Apollo Heat Treating and Processing, LLC.

Randy Call  
Randy L. Call  
Plant Manager  
Apollo Heat Treating & Processing, LLC



10400 Capital Avenue • Oak Park, Michigan 48237 • (248) 398-3434

### CERTIFICATION OF HEAT TREATMENT

---

Date: 12 / 29 / 2017

Certification Number: 17 - 0889

Customers Order Number: 823764

Part Number: 8168 - 8556

Heat Number: 12080470

Heat Treat Job Number: 3173

---

Material: 4140

Quantity: 91 Pcs.

Weight: 91,375 Lbs.

Description: 4.0000" Diameter x 23' 4" Length

Per Specification: ESHT HT4140 - 42QT

---

	Temperature	Time at Heat	Coolant
Normalized	N/A		
Preheat	N/A		
Austenitized/Hardened	1575 °F	1 Hour 30 Minutes	
Spray Quenched	98.1 °F – 104.9 °F	N/A	Water
Temper	1150 °F	2 Hours 35 Minutes	Air Cooled to Ambient
Temper	N/A		

---

Method of heat treat monitor, set point thermocouple (Type K). Equipment calibrated per AMS2750E. We hereby certify the above material has been treated in the manner described are correct as contained in the records of Apollo Heat Treating and Processing, LLC.

A handwritten signature in black ink, appearing to read "Randy L. Call".

Randy L. Call  
Plant Manager  
Apollo Heat Treating & Processing, LLC

## EN 10204:2004-3.1

**Eaton Steel Bar Company Inspection Certificate 1506751**

Customer

BOL 17662 22-May-2015

Customer PO 899339

Item 8914 rev 002

Customer Item 013743

Item Description

2 Hr RD 4140ME 18ft FQLPA FG MST

All bundles listed below were produced using steel from Heat 144605 Issued by ALTON STEEL and were completed from Eaton Steel Job 763566.

Chemistry	Description	Value	Units	Heat-Treating	Description	Value	Units
C	Carbon	0.41000	PWT	AUGMENT TEMP F	Austenitize Temp in Fahrenheit	1600 - 1700	DBCF
Mn	Manganese	0.89000	PWT	MAGNETISM-HT	Magnetism in Gauss	0 - 20	GN
P	Phosphorus	0.01500	PWT	MST-HT	Machine Straighten	Satisfactory	
S	Sulfur	0.02400	PWT	TIME AT TEMP	Time at Temperature	Report	
Si	Silicon	0.09100	PWT	Mill Processing	Description	Value	Units
Ni	Nickel			MELT COUNTRY	Melted in Country	USA	
Cr	Chromium	0.83500	PWT	ROLLED COUNTRY	Rolled in Country	USA	
Mo	Molybdenum	0.16000	PWT	RED RATIO	Reduction Ratio	15 - 60	RED
Al	Aluminum	0.00300	PWT	ASTM Standard	Description	Value	Units
Cu	Copper	0.28000	PWT	A322-91	Steel Bars, Alloy, Standard Grades	Conforms	
V	Vanadium	0.00500	PWT	Structure	Description	Value	Units
Cr	Columbium	0.03000	PWT	PERCENT LP	Percent Lamellar Pearlite	70 - 100	PCT
Ca	Calcium	0.0190	PWT	MICROSTRUCTURE	Reported Microstructure	Lip	
N	Nitrogen	0.01220	PWT	Tag Number	Qty	Units	
DI	Ideal Diameter	4.83000	IN	022-1591052	8230	LBS	10ft
Cleanliness	Description	Value	Units				
MACRO. ETCH	Report macro etch results.						
Geometry	Description	Value	Units				
DIA. DIA. DIAMETER	Diameter	1.9844 - 2.0156	IN				
Jointivity	Description	Value	Units				
J1	1/16 inch from Quenched End	56	HRC				
J2	2/16 inch from Quenched End	56	HRC				
J3	3/16 inch from Quenched End	56	HRC				
J4	4/16 inch from Quenched End	56	HRC				
J5	5/16 inch from Quenched End	56	HRC				
J6	6/16 inch from Quenched End	54	HRC				
J7	7/16 inch from Quenched End	53	HRC				
J8	8/16 inch from Quenched End	51	HRC				
J9	9/16 inch from Quenched End	50	HRC				
J10	10/16 inch from Quenched End	48	HRC				
J12	12/16 inch from Quenched End	46	HRC				
J14	14/16 inch from Quenched End	44	HRC				
J16	16/16 inch from Quenched End	42	HRC				
J18	18/16 inch from Quenched End	41	HRC				
J20	20/16 inch from Quenched End	40	HRC				
J22	22/16 inch from Quenched End		HRC				
J24	24/16 inch from Quenched End	38	HRC				
J28	28/16 inch from Quenched End	35	HRC				
J32	32/16 inch from Quenched End	34	HRC				
Mechanical	Description	Value	Units				
BRIEFL MID	Brinell Mid Radius	197.0	MM				
Bundled tags with Eaton Steel Identifiers reference the steel grade, heat, purchase order number, part number, product description and weight. Tested and certified in accordance with Eaton Steel's Quality Manual OM-00001 / Rev 3 / 2/26/13.							

We hereby certify the above to be in conformance, and a true copy of data represented in company records. This steel was not subject to weld repair or exposed to mercury while in the possession of Eaton Steel.

Created on 22-May-2015  
Thomas Shabess, Corporate Metallurgist

This document was prepared by means of electronic  
data processing and is valid without signature.  
http://www.eatonsteel.com

Tel: 248-398-3434

Fax: 248-398-1434



## CERTIFIED MILL TEST REPORT

Alton Steel Test Lab  
#5 Cut Street  
Alton, IL 62002-9011  
(618) 463-4490 DCT 2486  
(618) 463-4491 (Fax)

### BILL TO

Eaton Steel Corporation  
10221 Capital Avenue

### SHIP TO

Eaton Steel Corporation  
Super Steel Treating Company  
CWC - To be delivered to customer's  
Truck

Date: 09/24/2014 Customer PO: 148131 Specifications: SAE 4140H

ASTM A 29-12, ASTM A 322-07

Alton, IL 62002

Strand Cast, RR = 15.60:1

Heat Number	Chemical Analysis Test Methods ASTM E-415 & E-1019										Yield PST		Tensile PST		% Elongation		% R.O.A.		Bend Test	
Heat Number	C	Mn	P	S	Si	Cu	Ni	Cr	Mo	Sn	Al	Nb(C)	V	B	Ti	N	Ca			
144805	0.41	0.59	0.015	0.024	0.24	0.28	0.091	0.835	0.160	0.012	0.003	0.030	0.005	0.0004	0.0010	0.0122	0.0019			

### JOMINY HARDENABILITY USING ASTM A-225 CALCULATED FROM CHEMICAL DATA

Heat Number.....	GS.....	01.....	11.....	12.....	13.....	14.....	15.....	16.....	17.....	18.....	19.....	20.....	21.....	22.....	23.....	24.....	25.....	
144805		8	4.33				56	56	56	56	54	53	51	50	48	46	44	42

### SPECIAL TEST RESULTS

Heat Number	TA	TB	TC	TD	HA	HB	HC	HD	S	O	S	D	R	C	RC	RS	BM
144805															2	2	2

### ADDITIONAL COMMENTS

No mercury, lead, cadmium, or other constituents mentioned or

stated are used or deliberately added in the production of this

steel. No weld or weld repairs were performed on this material.

This Steel is 100% Electric Arc Furnace Material and Rolled in the

U.S.A. Material qualities as per ASTM specification.

Subscribed and sworn to before me, a Notary Public, is and for

the County of Madison, State of Illinois

this \_\_\_\_\_ day of \_\_\_\_\_

My commission expires \_\_\_\_\_

(Notary Public)



Super Steel Treating  
5227 River Ave  
Warren MI 48091  
(586) 755-9140  
ISO 9001:2008 Registered

## Quality Report

Date	Q.C. ID No.
10/17/14	W0BR137106

Customer: EATON STEEL CORP

Metallurgist: AUR

### Metallurgical Certification

Customer: BATON STEEL CORP PLT#2  
Grade: 4140  
Size: 2.0000  
Heat No: 144805  
Receiver: BR137106  
Cust PO: 147376  
Mill Notes:  
Our Part: EATO5563  
Cust Part: 8914

Furnace Process: 1  
Date Processed: 10/17/14  
Accepted Weight: 64500  
Accepted Qty: 7  
Mill: ALTON  
Release No: 1  
Process TY: LPA

### Representative Sampling

Sample	Coil ID#	Decarb	PP	-- Mid Radius --	--- Surface ---	Microstructure
				HRC	HRB	HRB
137199	0.010			1.97	1.97	1.97
						100% PEARLITE

coil/Bundle ID: 144805001 144805002 144805003 144805004  
144805005 144805006 144805007

W0763566A  
cert 389808

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140-R2.000  
 DATE: APR 06 2018

PO / BATCH NO: 039505/5058925

MATERIAL CERT REC'D: yes  
 QUANTITY RECEIVED: 2,  
 QUANTITY INSPECTED: 2,  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 2.000  
 THICKNESS RECEIVED: 2.000  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT FINISH	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORROSION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT GRAIN DIRECTION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT MATERIAL PER M-DRAWING	Y <input checked="" type="radio"/> N <input type="radio"/>	Astm A29
CORRECT THICKNESS	Y <input checked="" type="radio"/> N <input type="radio"/>	
PHOTO REQUIRED	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT REF # TO LINK CERT	Y <input checked="" type="radio"/> N <input type="radio"/>	Heat # 144805
CORRECT MATERIAL IDENTIFICATION	Y <input checked="" type="radio"/> N <input type="radio"/>	
CORRECT M# ON THE MATERIAL	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	Y <input checked="" type="radio"/> N <input type="radio"/>	
DOES THIS REQUIRE AN EXTRUSION REPORT	Y <input checked="" type="radio"/> N <input type="radio"/>	

CUT SAMPLE PIECE OF MATERIAL AND PREFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

testers located in the Quality Office

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY:	<u>DAS</u> <u>11</u>	SIGNED OFF BY:	
DATE:	<u>9-89 APR 06 2018</u>	DATE:	

Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in

# SPECIFICATION CONTROL DRAWING

REV.	DESCRIPTION	ECN #	DATE	BY	APPROVED
A	NEW ISSUE	17-790	17.12.13	VM	ML

PURCHASE MATERIAL: AISI 4140 ROUND BAR

MINIMUM ROCKWELL C = 20 RC  
MAXIMUM ROCKWELL C = 38 RC

SPECIFICATION:

*JUL*  
ASTM A29, AMS 6349, AMS 6382, AMS 6529

PART NUMBER:

MT-4140-R-[D.DDD]  
WHERE "D.DDD" = DIAMETER IN INCHES

EX. 4" ROUND BAR = MT-4140-R-4.000

TITLE		DRAWING NUMBER			
AEROSPACE		DRAFT			
Hawker Siddeley Canada		DRAFT			
PART NO.		DRAFT			
TOOL NO.		DRAFT			
MT-4140-R		DRAFT			
REV.		DRAFT			
A		DRAFT			
INITIALS AND DATE		DIMENSIONS & SPECIFICATIONS			
DESIGNED BY: VMA 7/7/2013		DIMENSIONS & SPECIFICATIONS			
DRAWN BY: VMA 27/13/2013		DIMENSIONS & SPECIFICATIONS			
CHECKED BY: X 12/19/2013		DIMENSIONS & SPECIFICATIONS			
MFG REVIEW BY: GP 12/20/2013		DIMENSIONS & SPECIFICATIONS			
APPROVED BY: M 12/20/2013		DIMENSIONS & SPECIFICATIONS			
COPYRIGHT © 2013 BY DART AEROSPACE LTD.		DIMENSIONS & SPECIFICATIONS			
ONE DOCUMENT PRINTED AND COPIED LEGIBLY AND RECORDED IN THE COMPANY'S DRAWING ROOM					
THIS DRAWING IS THE PROPERTY OF DART AEROSPACE LTD. IT IS NOT TO BE COPIED OR USED BY ANYONE ELSE WITHOUT THE EXPRESS WRITTEN APPROVAL OF DART AEROSPACE LTD.					
PRINT DATE: 12/20/2013					

## MATERIAL RECEIPT INSPECTION FORM

MATERIAL: MT-4140 QT-R4.000  
 DATE: APR 06 2019

PO / BATCH NO.: 039505/5058924

MATERIAL CERT REC'D: Yes  
 QUANTITY RECEIVED: 2  
 QUANTITY INSPECTED: 2  
 QUANTITY REJECTED: 0

THICKNESS ORDERED: 4.000  
 THICKNESS RECEIVED: 4.000  
 SHEET SIZE ORDERED: N/A  
 SHEET SIZE RECEIVED: N/A

DESCRIPTION	NCR (Check Y/N)	COMMENTS
SURFACE DAMAGE	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT FINISH	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORROSION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT GRAIN DIRECTION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT MATERIAL PER M-DRAWING	<input checked="" type="radio"/> Y <input type="radio"/> N	<i>A57m 4140 - 42 QT</i>
CORRECT THICKNESS	<input checked="" type="radio"/> Y <input type="radio"/> N	
PHOTO REQUIRED	<input checked="" type="radio"/> X <input type="radio"/> N	
CORRECT REF # TO LINK CERT	<input checked="" type="radio"/> Y <input type="radio"/> N	<i>Heat # 12080470</i>
CORRECT MATERIAL IDENTIFICATION	<input checked="" type="radio"/> Y <input type="radio"/> N	
CORRECT M# ON THE MATERIAL	<input checked="" type="radio"/> Y <input type="radio"/> N	
DOES THIS MATERIAL REQUIRE ENGINEERING SIGN OFF	<input checked="" type="radio"/> Y <input type="radio"/> N	
DOES THIS REQUIRE AN EXTRUSION REPORT	<input checked="" type="radio"/> Y <input type="radio"/> N	

CUT SAMPLE PIECE OF MATERIAL AND PERFORM A HARDNESS CHECK. RECORD RESULTS BELOW					
TYPE OF MATERIAL SIZE OF TEST SAMPLE HARDNESS / DUROMETER READING	HRC	HRB	DUR A	DUR D	WEBSTER

*testers located in the Quality Office*

QC 18 INSPECTION		ENGINEERING SIGNOFF (if required)	
INSPECTED BY:	<u>DAS 11</u>	SIGNED OFF BY:	
DATE:	<u>9-8-18 APR 06 2018</u>	DATE:	

**Attach this inspection sheet with the corresponding material cert and remit to be scanned and received in**

## SPECIFICATION CONTROL DRAWING

1	2	3	4	5	6	7	8
REV.	DESCRIPTION	REV.	A	REV.	C	D	B

PURCHASE MATERIAL : AISI 4140 QUENCHED & TEMPERED STEEL ROUND BAR  
 SPECIFICATION: ASTM 4140 QT or ASTM 4142 QT  
 PART NUMBER: MT-4140QT-R [D,DDD]  
 WHERE "D,DDD" = DIAMETER IN INCHES  
 EG. 5/8" ROUND BAR = MT-4140QT-R0.625

TITLE		REV	
<b>AISI 4140 QT &amp; T ROUND BAR</b>			
DRAW. NO.	MT-4140QT-R	REV	A
DESIGN BY:	VM 8/9/2017	FRACTIONS ± 1/8	
DRAWN BY:	VM 09/14/2017	ANGLES ± 1°	
CHECKED:	VM 09/14/2017	DIMENSIONS ARE IN INCHES	
MFG. APPR.:	DP 09/14/2017	UNLESS OTHERWISE SPECIFIED	
QA APPR.:	PD 09/14/2017	ASME Y14.5M 2009	
APPROVED:	VM 09/14/2017	3 DIMENSIONAL LIMITS APPLY	
DATE:	9/14/17	SCALE: N.I.S WEIGHT 0.0 LBS	
		SHEET 1 OF 1	
COPYRIGHT © 2017 TD DART AEROSPACE LTD. TRADE NAME IS USED FOR THE PURPOSE OF IDENTIFICATION ONLY AND DOES NOT IMPLY AN AFFILIATION OR ENDORSEMENT. ALL RIGHTS RESERVED. THIS DRAWING IS THE PROPERTY OF TD DART AEROSPACE LTD. IT IS THE PROPERTY OF TD DART AEROSPACE LTD AND IS TO BE KEPT AS A TRADE SECRET. NO COPIES ARE TO BE MADE EXCEPT AS AUTHORIZED BY TD DART AEROSPACE LTD.		1	